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Blended Learning: Overview and Recommendations for Successful Implementation

Harris, P., Connolly, J.F., Feeney, L. RCSI-ILHM, October 2008

Purpose

The purpose of this paper is to identify key themes within the blended learning literature and to develop a series of practical recommendations to facilitate the successful adaptation and implementation of a Blended approach to learning delivery.

Design/methodology/approach

The literature was reviewed and informed a series of recommendations for organisations considering adopting or implementing blended approaches to teaching and training.

Findings

Several key themes centering on the importance of evaluation, skills training, pedagogy, human factors, technology and implementation were identified. The emerging themes informed a series of practical recommendations to assist organisations considering blended learning approaches. Findings highlight the current limitations in the evidence base.

Practical implications

The identified key themes and practical recommendations provide a useful assist to organisations considering adopting and implementing blended approaches to teaching and training.

Originality/value

This paper highlights key areas for development in the blended learning literature and at the organisational level.

Paper type

General Review

Notes to the editor

This article represents the beginning stages of an evaluative study assessing the development and implementation of a blended learning approach to teaching and training at our organisation. We would hope to submit findings on the outcomes of this process in the future.

Keywords

Blended learning

Pedagogy

Instructional design

Educational

Learning delivery

E-learning

1. Introduction

Embedding e-learning approaches in higher education has been designated a key priority (Department of Education and Skills, 2003; HEFCE, 2005a) with recent implications for programmes and policy suggesting that a blended approach is the 'preferred approach' (Childs, 2005, p30). In line with this:

“The current focus on learning technology in traditional universities indicates the significance of blended learning research for both society and economy.”
(Derntl and Motschnig-Pitrik, 2005 p 112.).

Many of the advantages and disadvantages of blended learning are well established; its potential to support and enhance meaningful educational experiences (Garrison and Kanuka, 2004) as well as to provide a cost- and resource-effective methodology (Twigg, 2003) has made it particularly appealing to a variety of organisations and institutions.

It remains to be seen which components of a blended learning approach are more appropriate and in what context. Blended learning design and implementation are heavily context-dependent, and generalization can be challenging. Consequently, it was deemed important to review the available literature with a view to adopting guidance and recommendations based on relevance to our organisation.

1.1 Context: The Case for Blended Learning

Increasingly, many organisations are considering a blended approach to learning, often prompted by the recognition that:

- The uptake and effectiveness of current learning delivery systems may be limited by their rigidity.
- The broad geographic spread and commitments of learners may necessitate greater access and flexibility.

- Blended learning may offer a more flexible and responsive way to learn and work.

As organisations expand, an integrated, strategic, best practice approach to learning delivery is required to ensure that all clients and staff are supported effectively irrespective of role or geographic location. For many organisations it may be appropriate to underpin such development and expansion with a flexible, adaptive and transferable delivery system.

1.2 Aims and Definition

The purpose of this paper is to identify key themes within the blended learning literature and to develop a series of practical recommendations to facilitate the successful adaptation and implementation of a Blended approach to learning delivery.

For the purposes of this review we adopted a comprehensive yet specific working definition used by Blüch and colleagues (2007) in their recent review of the literature:

“Blended learning describes learning activities that involve a systematic combination of co-present (face-to-face) interactions and technologically-mediated interactions between students, teachers and learning resources.”

2. Methodology

A literature search was conducted using several large databases (EBSCOhost; Emerald, ProQuest, ScienceDirect) to gather and review relevant articles. Two researchers conducted the same search to promote consistency of approach. Over 2,000 articles were retrieved (top level search terms ‘blended’ AND ‘learning’) and this was subsequently reduced to 97 following the application of several limiters (English language; abstracts only; search from 1997-present; peer-reviewed journal articles). Abstracts were also assessed on the basis of:

- Academic relevance *i.e. higher-level educational context.*
- Evaluative studies *i.e. objective evaluation and/or comparison of outcomes, interventions, approaches, models.*

Following a review of abstracts, 66 were selected for review of which 31 were available without purchase - there was insufficient project time and resources to purchase and review the remaining articles. The retrieved articles were divided between the researchers and reviewed using a data extraction and rating template. Following review and rating, the researchers discussed findings and analysed for common and key themes which then formed the structure of the Findings and Recommendations section below.

3. Findings And Recommendations

Our findings highlight some serious limitations in the quality of the current evidence base. However, the literature is useful in facilitating a series of recommendations and quality assurance steps for organisations at the early stage of adopting a blended approach to learning. It is particularly useful in identifying and discussing:

- a) The necessary circumstances for successful implementation.
- b) The potential risks that may inhibit successful development and implementation.

Rather than an exhaustive account of individual studies, this process identified several recurring themes within the literature. These key themes – Evaluation, Skills Training, Support, Implementation, Technology, Pedagogy, and Human Factors – are discussed below:

3.1 Evaluation

There is a clear need for adequate evaluation in blended learning programme development (Derntl, 2005; Ginns and Ellis, 2007; Garrison and Kanuka, 2004; Bliuc et al., 2007). The current situation has been described as a phase of experimentation (Nichols, 2003). Derntl's (2005, p.112) summation provides a useful description of the evidence:

“...reports are mostly descriptive, experience-based, and often lacking cues on how to generalize the employed scenarios to enable transfer to other domains and contexts ... Scenarios for blended learning need to be discovered and

tested incrementally to acquire skills and familiarity in employing them. Re-use on a larger scale is not yet supported.”

It remains to be seen which components of a blended learning approach are more appropriate and in what context. Some studies explore general states such as student experience and perception, (Bliuc et al. 2007) others look at specific facets such as:

- Sense of community.
- Student engagement and interaction.
- Exam performance.
- Student satisfaction.
- Cost effectiveness.

The literature highlights the fact that “no two blended learning designs are identical” and that this “creates daunting challenges at the front end of the design process” (Garrison and Kanuka, 2004, p.97). Further, it is suggested (for example Bliuc et al., 2007) that future research needs to consider and evaluate blended learning from a more holistic perspective. That is, rather than evaluating the individual components of blended learning in isolation, it is the interrelation of delivery modes that may be important.

3.11 Recommendation

Blended learning interventions should be appropriately and thoroughly measured, evaluated by participants, and analysed by the teaching and production team. Ideally, evaluation should take account of:

- Learning outcomes.
- Participants’ learning styles/preferences.
- Motivation.
- Clarity of goals, content.

- Interaction.
- Perceived value and satisfaction.
- Effectiveness.
- Appropriate support, workload, and assessment.
- Access to resources, usability and design.
- How the 'blend' of learning worked.
- Confidence logs if possible.
- Evidence of meta-cognition.

Where possible, standardized, reliable and valid measures should be employed to facilitate replication and appropriate comparison.

3.2 Skills Training

Lack of training is identified as a considerable risk (Santy and Beadle, 2008). New skill sets may be required by staff and students from basic information technology (IT) skills to learning new ways of interacting. Important skills training for trainers revolves around IT, information literacy, and e-learning development. Skills training for learners will involve IT, e-learning study skills, time management, and advice on organising e-learning tasks Childs et al., 2005).

Stewart (2002) notes that training should be considered for the trainers in light of increasing requirements for technical know-how, for example, multi-tasking during synchronous online sessions in a virtual learning environment, or managing the nuances of multi-cultural appropriateness without face-to-face interaction.

3.21 Recommendation

Skills training may be required both to produce and to use elements of the blended learning content.

Appropriate time and resources should be unambiguously ring-fenced in order to provide the

necessary training if there is a skills-gap. Decisions made regarding production of content are most pertinent here, and a cost/benefit analysis should recommend whether to produce content in-house or to outsource to an e-learning provider.

3.3 Support

A commonality across the research is the importance of teacher presence in the learning process. The development of critical thinking and higher order learning is as Garrison and Kanuka point out “rarely accomplished by students in isolation” (2004, p98).

User support systems and adequate time or skills to develop e-learning material and “the presence of a range of skilled IT staff, design staff, trainers, support staff, administrators” have all been identified as important (Childs et al., 2005, p.29). Some authors suggest a need for a dedicated student service support center to assist learners (Garrison and Kanuka, 2004).

3.3.1 Recommendation

As with any new approach to delivering learning, comprehensive support for all stakeholders should be available as and when required. This should be comprised of an appropriately-skilled team. Clear and upfront communications regarding this are likely to facilitate buy-in from all involved. A standard of continuous improvement should be maintained which assures minimal possible disruption to the learning delivery.

3.4 Implementation

Resource assessment at the human, the financial and the technical level has been described as vital within the design process (Garrison and Kanuka, 2004; Green et al., 2006). Blended learning implementation can be viewed as extremely demanding of teaching staff especially in terms of course organisation (Perreira et al., 2007).

When developing learning and training systems, it is essential to assess user acceptance (Stewart, 2002). Feedback and evaluation from instructors and learners should be incorporated into development. As Aspden and Helm (2004) note “active participation of all involved and the

environment is only going to be effective if the relevant parties engage with the process” (Aspden and Helm, 2004, as cited in Bliuc et al., 2007 p237).

Further, Childs et al. (2005) in a recent systematic review highlight the importance of setting aside time to develop and evaluate material. When implementing blended learning, the literature suggests that one spends adequate time researching the approach and avoids the temptation to make do with a short-term fix (Trasler, 2002).

3.41 Recommendation

The key phrase echoed throughout the literature regarding implementation is ‘buy-in’. Time should be set aside to communicate with, to engage and to actively involve instructors and prospective end-users so that they are fully aware of the blended learning initiative. The temptation of a short-term fix should be avoided in favour of an ongoing and evaluative approach. Emphasis of implementation should be on the learning and associated outcomes rather than the technology.

3.5 Technology

A repeated theme in the discursive literature is that:

“the medium itself may be less important than the way in which teaching is approached” (Laurillard cited in Ennew and Fernandez-Young, 2005 p151)

However, it is clear that the technology underpinning any blended learning environment is of pivotal importance to programme efficiency, user acceptance and satisfaction. Accessibility issues and technology limitations of a global user base represent important considerations. Course content and learning approaches need to be evaluated – “course content and learning strategies must also be evaluated for accessibility in terms of bandwidth, firewall issues, and connection speed” (Stewart 2002, p. 270). Easy access to technology for both trainers and learners is a prerequisite for successful delivery of any e-learning component (Childs et al., 2005). Both the technology and the learning design need to be of the highest quality possible (Mitchell et al., 2007), however, to be most

effective, emphasis should be shifted from the technology aspect towards the learning aspect (Sloman, 2007).

3.51 Recommendation

The technology should be subservient to the function of teaching and the desired learning outcomes. Limitations regarding access and technology should be accounted for.

3.6 Pedagogy

Consideration should be given to the learning process, learning outcomes, and the learning environment. For example, several researchers suggest a social and constructivist approach to learning (Green et al., 2006; Bandura, 1997). The importance of interaction and discussion to the learning process is suggested (Green et al., 2006). In this regard 'classroom community' has also been identified as a relevant variable in the design and implementation of blended learning (Rovai, 2000; 2002).

It is paramount to consider the learning outcome. Several questions are raised regarding this:

- Can the learning outcome be achieved without face-to-face contact and/or classroom discussion? Is there co-construction of knowledge?
- Are we teaching 'what to think' or 'how to think' (Butson, 2003)?
- Is it a substitute or a complimentary material?
- What level of difficulty and complexity of information?
- Is the integration of knowledge a requirement?

Some authors advocate a blended approach based on multiple pedagogical approaches and suggest that "by presenting information to students in a variety of ways it is suggested that a greater number of individual learning styles could be covered"(Adams, 2004; Moge, 1999 as cited in Green et al., 2006, p394).

Margaryan et al. (2004) in a case study describing a blended learning approach adopted by a large organisation, cites Merrill's (2003) key principles of instructional design:

1. Learning is promoted when learners are engaged in solving real-world problems.
2. Learning is promoted when existing knowledge is activated as a foundation for new knowledge
3. Learning is promoted when new knowledge is demonstrated to the learner.
4. Learning is promoted when new knowledge is applied by the learner.
5. Learning is promoted when new knowledge is integrated into the learner's world.

3.61 Recommendation

Evidence-based instructional design concepts should underpin the learning. The learning should be adult-centred. If a course is to be re-designed from scratch it should not be assumed that the pedagogy underlying the original course is automatically best for a blended learning approach. For existing courses, elements which are to be delivered in a blended learning style should be carefully reviewed to see how they can be optimised for the different method of delivery.

3.7 Human Factors

Technology-push approaches without adequate consideration of learner needs and expectations are limited (for example, HEFC, 2005b; 2005a; Ennew and Fernandez-Young, 2006). Within the literature this concept is continually reiterated and underlines the importance of considering learner's individual differences, personal characteristics, opinions and learning styles (Akkoyunlu and Yilmaz-Soylo, 2008).

These factors have the potential to significantly impact on the learning environment and have played an important role in evaluating the effectiveness of learning processes (Akkoyunlu and Yilmaz-Soylo, 2008; Bliuc et al., 2007; Ginns and Ellis, 2007; Childs et al., 2005). Consideration of the learner's individual needs and managing learner expectations and understanding are necessary first steps (Bliuc et al., 2007). Evidence from the literature also suggests it is important to take account of learner motivation (Stewart et al., 2002) and ensure learner readiness (Baldwin-Evans, 2006).

Clarity of expectations, particularly given the importance of learner motivation is important. For example, there is a need to demonstrate (and make clear to students) how online activities will link to assessment (Santy and Beadle, 2008).

Attitude and motivation of learners is seen as particularly significant when virtual learning (e-learning) is involved (Mitchell et al., 2007). Klein et al. (2006) identified the importance of considering motivation to learn and its relationship to course outcomes and proposed the following useful conceptual model:

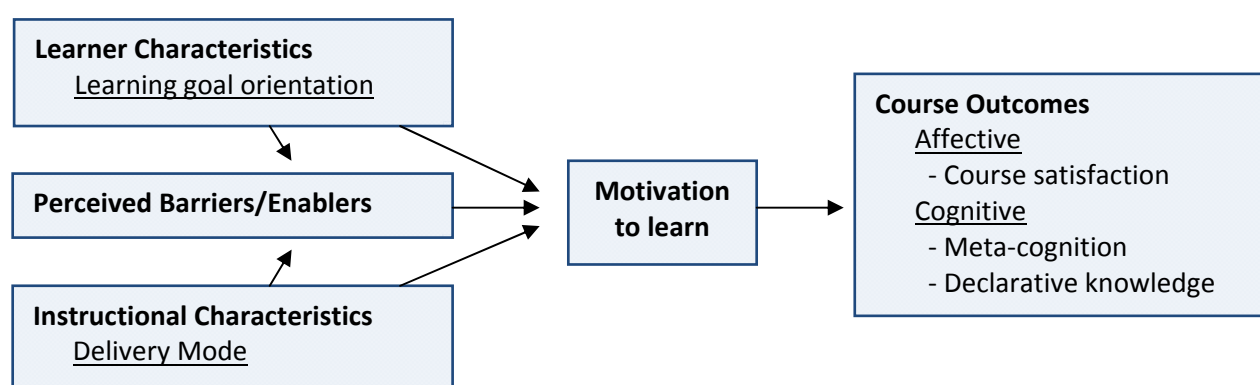


Figure 1: Conceptual Model Underlying the Hypothesized Relationships. Adapted from Klein et al., 2006.

3.71 Recommendation

Users' needs, learning styles, expectations and motivations should be considered. To get optimal buy-in students will need to be motivated to participate. If their expectations are met (or exceeded) it will result in a positive effect on their experience and motivation to engage further in the blended learning.

4. Discussion

This article identified several key themes within the blended learning literature and highlighted a series of practical recommendations to facilitate the successful adaptation of a blended approach to learning delivery.

What is clear from the literature is that prior to, and during the development and implementation phases of a blended learning approach, it is vital to consider a variety of stakeholder perspectives (organisation, instructor and most importantly, the end-user or learner). Failing to do so represents a significant risk. A consideration of the identified areas in this review from all relevant perspectives is necessary.

Deciding on which specific courses and course elements to blend, and how best to deliver these elements and to what degree/extent, will most likely rest with the expert instructor and to some degree with the organisation. The technology itself may not be as important as accessibility, integration with the organisation, staff and learners, and the actual material content it delivers.

Appropriateness in this regard is highly context specific and necessitates a consideration of pedagogy as a first step. Individual characteristics such as motivation, expectations and learning style as well as cultural considerations must be considered alongside learning processes, learning outcomes and environmental factors (technology; support; skills).

In conclusion, many important questions need to be asked prior to shifting from traditional face-to-face methods to a blended approach involving electronic delivery and learning. A consideration of the advantages and disadvantages of available approaches may be useful (for example, Blieman et al., 2004).

It is clear that while blended learning has the potential to overcome several of the disadvantages of both traditional methods and e-learning it is important to recognize its limitations. Adequate time, resources and evaluation are critical.

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